

FEASIBILITY STUDY

NC 146
(Long Shoals Road)
From NC 191 to US 25 in Asheville
Buncombe County

R-2813

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



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1/21/13
Date

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I. GENERAL DESCRIPTION

This is a Feasibility Study recommending the widening of NC 146 (Old NC 280, Long Shoals Road) from NC 191 to US 25 in Asheville, Buncombe County (see Figure 1). Total project length is 3.5 miles. The recommended typical cross-section is a five-lane, 68-foot curb and gutter section, with 8-foot berms. The recommended right-of-way width is 90 feet, without control of access. The estimated cost of the recommended improvements is \$ 16,700,000 (\$7,000,000 for right-of-way, and \$9,700,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents recommended typical cross sections, general alignments, and estimated cost of the improvement. The study also attempts to provide an early identification of potential environmental, permitting, or other issues which deserve consideration in the planning and construction stages.

II. EXISTING CONDITIONS & NEED FOR PROJECT

This project was requested by the Asheville Urban Area Metropolitan Planning Organization. The improvement is needed to provide needed traffic carrying capacity, and to increase the safety of the roadway. The studied section of NC 146 (Long Shoals Road) has been designated until recently as NC 280. NC 146 serves east-west traffic in south Asheville by linking NC 191, and US 25 with I-26. The roadway also provides access to Valley Springs School, T. C. Roberson High School, and Lake Julian Park.

Existing NC 146 consists of a two-lane, 20-foot pavement with 4 to 8-foot usable shoulders. The roadway is located in rolling terrain, and contains grades up to 6.5 percent.

According to the statewide functional classification system, the studied roadway from NC 191 to I-26 is classified as a rural major collector. From I-26 to US 25, the roadway is classified as an urban minor arterial. The studied roadway is to be included in the next update of the Asheville Thoroughfare plan as a Major Thoroughfare.

Right-of-way width along the studied section of NC 146 varies from 36 to 100 feet, without access control. Utilities parallel both sides of the roadway, including water, electric power, gas, and buried telephone cable.

The west terminal of the project is at the signalized intersection with NC 191. At this location, NC 191 consists of a 2-lane, 20-foot pavement with 4-foot usable shoulders.

The east terminal of the project is at the signalized intersection with US 25 in Asheville. US 25 consists of a 5-lane, 64-foot curb and gutter section.

Lake Julian Park and campground are located along the south side of NC 146, between I-26 and US 25. The park and campground are operated by the Buncombe County Parks and Recreation Department. It should be noted that the park's property extend across, to the north of NC 146 at a location approximately 0.4 mile west of US 25. Additionally, Valley Springs School's athletic fields are located along the north side of NC 146, approximately 0.75 mile west of US 25. The fields are administered by Buncombe County Parks and Recreation Department for public use. This section of NC 146 is a part of the draft Buncombe County bicycle route system.

Detailed traffic estimates, and turn-movement counts were unavailable for this study. However, based on earlier traffic counts, it is estimated that the average daily traffic (ADT) currently using NC 146 is 9,000 vehicles per day (vpd).

Under current conditions, and estimated traffic demand, the studied portion of NC 146 is operating at level-of-service (LOS) E during the peak hour. With the recommended widening to five lanes, and an estimated 2012 ADT of 12,500 vpd, the roadway would operate at LOS D in the peak hour.

During the period from May 1989 thru April 1992, a total of 102 accidents were reported on the studied portion of NC 146. Of these 102 accidents, 34 accidents involved rear-end collisions, 24 involved turning vehicles, and 21 involved angle collisions. The total accident rate for the studied roadway was 318.2 accidents per 100 million vehicle-miles, compared to a statewide accident rate for similar facilities of 287.9 accidents per 100 million vehicle-miles. The recommended improvements should lower the accident rate for the roadway, by improving the sight distance and providing a continuous left-turn lane.

III. RECOMMENDATIONS

It is recommended that the 3.5 mile length of NC 146, from NC 191 to US 25 be widened to a five-lane, 68-foot curb and gutter section with 8-foot berms. The widening is to be carried out symmetrically, and asymmetrically about the existing roadway to minimize adverse impacts. The recommended right-of-way width is a minimum 90 feet to accommodate the curb and gutter section, without control of access. The 68-foot wide section would provide 14-foot outside (curb) lanes, as a bicycle safety accommodation, and three 12-foot lanes.

The 3.5 mile length of the studied roadway is divided into three sections for programming purposes (see Figure 2):

Section 1: From NC 191 to the west ramps of the I-26 interchange. This section is 1.6 miles long, and it includes bridge number 10053 which carries NC 146 over the French Broad River. The bridge is 396 feet long, with a clear roadway width of 28 feet, and a sufficiency rating of 76.7. The recommended improvements include widening the existing structure to a clear roadway width of 68 feet.

Section 2: This section consists of the I-26 interchange, and is approximately 0.1 mile in length. The recommended improvements include the replacement of bridge number 10113 and bridge number 10114 that carry I-26 over NC 146. This is necessary due to the insufficient horizontal clearance (41 feet), between the existing bridge piers, to accommodate widening NC 146 to a 68-foot section under the bridges. Bridge number 10113 carries the westbound lanes of I-26 over NC 146. It is 134 feet long with a clear roadway width of 38 feet, and a sufficiency rating of 88.8. Bridge number 10114 carries the eastbound lanes of I-26. It is 145 feet long with a clear roadway width of 38 feet, and a sufficiency rating of 89.8. The improvements would also include a temporary onsite detour to maintain I-26 traffic.

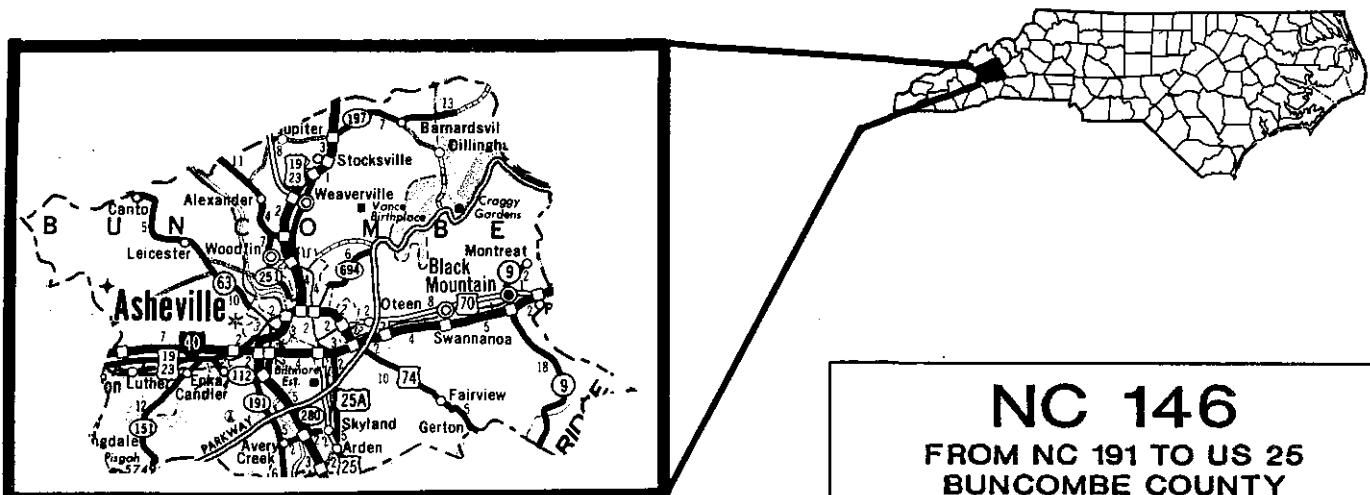
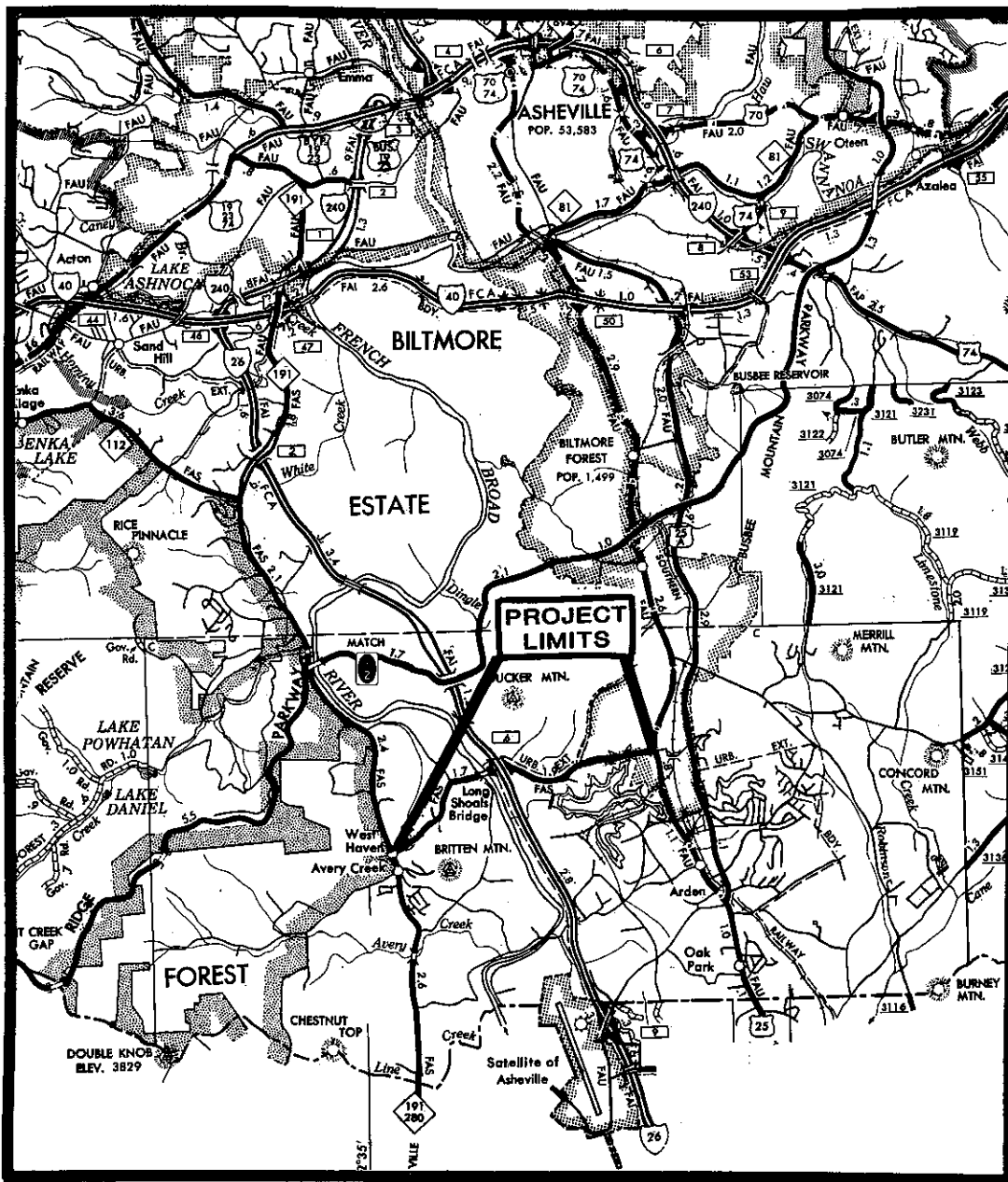
Section 3: This section is 1.8 miles in length, and includes NC 146 from the east I-26 ramps to the project's east terminal at US 25. It is recommended that this section carry a higher priority than the other two sections if staging is necessary. This is based on the higher traffic, density and type of land use served by this section. It should be noted that impacts on the Lake Julian Park, or the athletic fields may involve Section 4(f) of the DOT Act.

The estimated cost of the recommended improvements is:

	SECTION 1	SECTION 2	SECTION 3	PROJECT TOTAL
Right-of-way and Utilities	\$2,600,000	-	\$4,400,000	\$7,000,000
Construction	\$4,600,000	\$1,900,000	\$3,200,000	\$9,700,000
Total	\$7,200,000	\$1,900,000	\$7,600,000	\$16,700,000

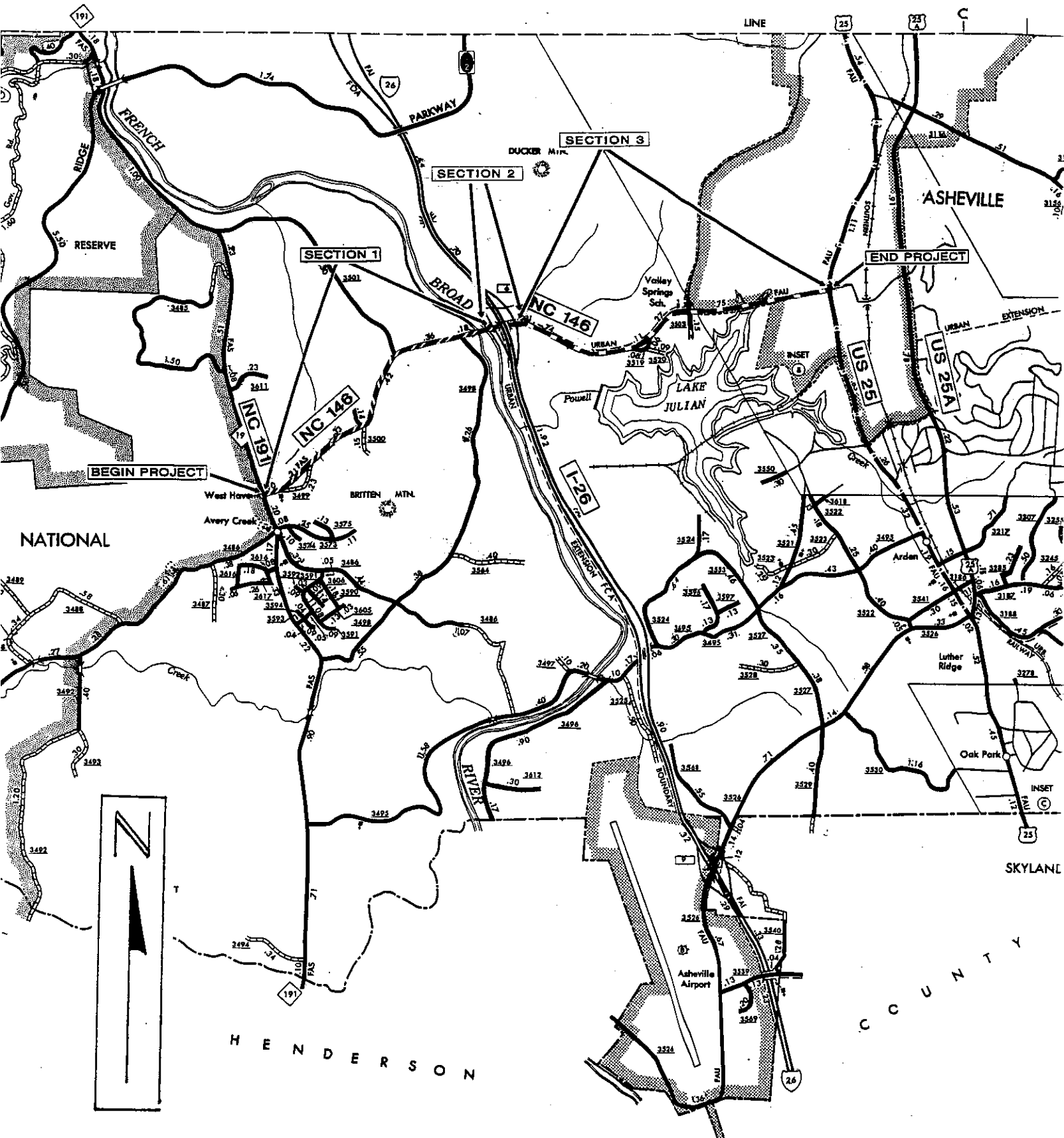
V. OTHER COMMENTS & CONCERNS

This project is estimated to require 4 residential, and 5 business relocations. The recommended improvements would likely involve Section 4(f) of the DOT Act.



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DATE: FEB 1992	VICINITY MAP
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FEASIBILITY STUDIES UNIT

NC 146
FROM NC 191 TO US 25
BUNCOMBE COUNTY

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DIVISION 13

FIGURE 2